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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/582,053	10/11/2006	Helmut Keul	H07224 US (13744-46)	1620
23416 7590 04/09/2008 CONNOLLY BOVE LODGE & HUTZ, LLP P O BOX 2207 WILMINGTON, DE 19899				
EXAMINER HEINER, LIAM J				
ART UNIT		PAPER NUMBER		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/582,053

Applicant(s)

KEUL ET AL.

Examiner

Liam J. Heincer

Art Unit

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 February 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 and 15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 and 15 is/are rejected.
- 7) ☒ Claim(s) 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

Claim 12 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 12 includes the compound "4-(2-oxo-1,3-dioxolane-4-yl) butyl methacrylate". However, methacrylate functional groups have been removed from the parent claim, claim 10, by amendment. Therefore claim 12 expands the scope of the claim from which it depends.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 10-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Kuwana et al. (JP 2003/012725). Note: A machine translation is being used for JP 2003012725 and all citations will be directed towards the translation.

Considering Claims 10-12: Kuwana et al. teaches 4-(2-oxo-1,3-dioxolane-4-yl) butyl (meth)acrylate (¶0018). It should be noted that because R¹ is not required in claim 10 it is still considered optional in its dependent claim, claim 11.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was

made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-3 and 6-8, 13, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pardoen et al. (US 2004/0127608) in view of Fukada et al. (US 2003/0134926).

Considering Claim 1: Pardoen et al. teaches modifying a polyamine/substrate with primary or secondary amine (§0007) with a cyclic carbonate (§0007) to form a urethane bond (§0007).

Pardoen et al. does not teach the cyclic carbonate as being one of the claimed formulas. However, Fukada et al. teaches using 2-oxo-1,3-dioxolane-4-yl-methyl acrylate as a cross-linker between two substrates (§0080-81). Pardoen et al. and Fukada et al. are combinable as they are concerned with the same technical difficulty, namely using cyclic carbonates to modify polymers. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have used the cyclic carbonate of Fukada et al. in the process of Pardoen et al., and the motivation to do so would have been, as Fukada et al. suggests, its bifunctionality allows it react with two substrates simultaneously (§0080-81).

Considering Claims 2 and 3: Pardoen et al. teaches the substrate as being a polymer (§0014-16).

Considering Claim 6: Pardoen et al. teaches the second end of the compound as reacting with a second polymer (§0029).

Considering Claims 7 and 8: Pardoen et al. teaches one of the substrate as being a polymer (§0014-16).

Considering Claims 13 and 15: Pardoen et al. teaches a polymer made by the process (§0001) for use in a dispersant (§0001).

Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pardoen et al. (US 2004/0127608) in view of Fukada et al. (US 2003/0134926) as applied to claim 3 above, and further in view of Van Holen (US 2004/0236119) and Jansen et al. (US 2003/0149127).

Considering Claims 4 and 5: Pardoen et al. and Fukada et al. teach the process of claim 3 as stated above.

Pardoen et al. does not teach the cyclic carbonate as containing an ammonium alkyl radical. However, Van Holen teaches a cyclic carbonate with an ammonium alkyl radical and other radicals that bonds with an amine (§0017-21 and 0026). Pardoen et al. and Van Holen are combinable as they are concerned with the same field of endeavor, namely cyclic carbonates. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have used a cyclic carbonate with an ammonium radical as in Van Holen in the method of Pardoen et al., and the motivation to do so would have been, as Van Holen suggests, to increase the reaction rate with the amine polymer (§0026).

Pardoen et al. does not teach the cyclic carbonate as having a urethane linkage. However, Jansen et al. teaches a cyclic carbonate with a urethane linkage (§0206). Pardoen et al. and Jansen et al. are combinable as they are concerned with the same field of endeavor, namely cyclic carbonates. It would have been obvious to have used the urethane linkage of Jansen et al. in the process of Pardoen et al., and the motivation to do so would have been, as Jansen et al. suggests, the urethane linkage creates a higher dipole moment than an ester linkage (§0207, examples 4 and 5) therefore creating a higher reaction rate.

Claims 1-3 and 6-9, 13, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pardoen et al. (US 2004/0127608) in view of Kuwana et al. (JP 2003/012725) as evidence by Fukada et al. (US 2003/0134926). Note: A machine translation is being used for JP 2003012725 and all citations will be directed towards the translation.

Considering Claims 1 and 9: Pardoen et al. teaches modifying a polyamine/substrate with primary or secondary amine (§0007) with a cyclic carbonate (§0007) to form a urethane bond (§0007).

Pardoen et al. does not teach the cyclic carbonate as being one of the claimed formulas. Kuwana et al. teaches 4-(2-oxo-1,3-dioxolane-4-yl) butyl (meth)acrylate (§0018). Pardoen et al. and Kuwana et al. are combinable as they are concerned with the same technical difficulty, namely using cyclic carbonates to modify polymers. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have used the cyclic carbonate of Kuwana et al. in the process of Pardoen et al., and the motivation to do so would have been, as Fukada et al. suggests, its bifunctionality allows it react with two substrates simultaneously (§0080-81).

Considering Claims 2 and 3: Pardoen et al. teaches the substrate as being a polymer (§0014-16).

Considering Claim 6: Pardoen et al. teaches the second end of the compound as reacting with a second polymer (§0029).

Considering Claims 7 and 8: Pardoen et al. teaches one of the substrate as being a polymer (§0014-16).

Considering Claims 13 and 15: Pardoen et al. teaches a polymer made by the process (§0001) for use in a dispersant (§0001).

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO form 892.

Response to Arguments

Applicant's arguments filed February 7, 2008 have been fully considered but they are not persuasive, because:

Applicants argument that Fukada et al. is not applicable to claim 1 is not persuasive as claim 1 still includes acrylate groups. Fukada et al. teaches 2-oxo-1,3-dioxolane-4-yl-methyl (meth)acrylate which can interchangeably have either methacrylate or acrylate groups. Therefore Fukada et al. still teaches an embodiment of the compounds used in claim 1 and is therefore still germane to the claims.

Applicant's arguments with respect to claims 9 and 10-12 have been considered but are moot in view of the new ground(s) of rejection.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Liam J. Heincer whose telephone number is 571-270-3297. The examiner can normally be reached on Monday thru Friday 7:30 to 5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on 571-272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Eashoo/
Supervisory Patent Examiner, Art Unit 1796
7-Apr-08

LJH
March 28, 2008